

Differential effects of subject-based and integrated curriculum approaches on students' experiences and outcomes: A review of reviews

Conference Abstract

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Abstract

Introduction

Broadly defined, the curriculum represents the entirety of students' schooling experiences, while the written curriculum tends to lay out the educational knowledge, skills and competencies that students ought to acquire. Such content can be organised in different ways and, even after decades of debate, there is no general agreement on the best curriculum structure. Debates tend to pitch subject-based and integrated curriculum approaches against each other although these are neither clearly defined nor distinct. Integration comes in various shapes and forms as manifold classifications in the literature demonstrate. For example, Fogarty (1991) distinguishes ten ways of integration. Numerous claims have been made regarding the comparative merits of different approaches, but these are often based on philosophical or theoretical ideas, anecdotes and poorly controlled studies rather than sound empirical evidence (Ellis & Fouts, 2001).

We assert that it is vital to consider potential consequences for students when deciding which curriculum structures to adopt. Are integrated approaches beneficial or could some ways of dissolving subject boundaries have detrimental effects on students' experiences and performance outcomes? This question of effectiveness can and should be based on empirical evidence. Thus, this paper reports a review of reviews to establish how more subject-based and more integrated approaches to curriculum organisation compare in terms of students' learning experiences (e.g., motivation, interest, enjoyment) and performance outcomes based on existing empirical evidence.

Method

We conducted a review of reviews following a systematic search strategy to synthesise and evaluate findings of existing literature reviews. The process is similar to that of a review of primary studies, but gauges the findings and methodological rigour of the reviews rather than primary studies (Cooper & Koenka, 2012). The literature was searched using Scopus, Web of Science and ERIC. The searches were limited to the period 1 January 1990 to 30 June 2022. The following search terms had to appear in the title, abstract or keywords of articles:

1. Inter?disciplinary OR Multi?disciplinary OR Trans?disciplinary OR Cross?disciplinary OR integrated OR integration
2. Curriculum
3. Primary OR Elementary OR Secondary OR High?School OR Middle?School OR School
4. Review

After adding articles that had been identified at earlier stages of this study as well as removing duplicates, the initial sample included 1094 records. A set of pre-determined exclusion criteria were independently applied by two researchers to remove all records that were considered unsuitable for the purpose of this study. For example, reviews were excluded if none of the included studies used control groups, if they did not concern the primary or secondary school level as well as if they only considered evidence for one 'side' or had not been peer-reviewed. The titles and abstracts were first screened, and remaining articles were then read in full or until one exclusion criterion was clearly met. This was

followed by a second round of article identification using reference and citation tracking of articles included in the first round. Nine review articles were included in the final sample.

The methodological quality of each review was appraised using the Assessment of Multiple Systematic Reviews (AMSTAR) 2 checklist (Shea et al., 2017). The checklist comprises 16 items. Two researchers independently appraised the reviews, and disagreements were resolved through discussion. Based on these assessments, the overall confidence in the findings was rated using the AMSTAR 2 online tool.

Results and discussion

Two articles reported a meta-analysis (Becker & Park, 2007; Hurley, 2001), one article reported a systematic literature review (González-Jaramillo et al., 2020), one reported a research evaluation (Robinson, 2013), another reported a scoping review (Follong et al., 2021), and the remaining four articles reported a traditional literature review (Gresnigt et al., 2014; Marttinen et al., 2017; Stohlmann, 2018; Winarno et al., 2020). The reviews were published between 2001 and 2021 and included primary studies that were published between 1935 and 2019. The reviews broadly focused on one of four subject areas that have been integrated with other academic subjects: 1) Science and STEM, 2) Nutrition, 3) Arts, and 4) Physical Education.

This review of reviews identified considerable shortcomings in the methodology of reviews, which call for caution when interpreting their findings. All reviews received the lowest possible quality rating (“*critically low*”) based on the AMSTAR 2 evaluation. As such, it is not possible to draw strong conclusions from the evidence they provide.

Although nine reviews have been included, the number of primary studies that directly compared the learning experiences and outcomes of students following more subject-based compared to more integrated curriculum approaches was small. There was variation in outcomes reported between primary studies. Studies tended to either find positive effects of integrated approaches or no differences in experiences and outcomes. Only few studies found detrimental effects of interventions using integrated approaches. Most positive effects were found for achievement outcomes, while there was hardly any support for motivational or affective benefits. Importantly, due to missing details about the control groups, it was often impossible to determine whether effects were likely driven by the integrative approach or the intervention more generally.

In addition to methodological shortcomings, the evidence needs to be considered in the light of various complexities that pertain to curriculum integration itself: a) the lines between subject-based and integrated approaches are blurred, b) findings for one approach to integration cannot necessarily be generalised to other approaches, c) findings for a specific combination of subjects cannot necessarily be generalised to other subject combinations, and d) different subjects are likely to be affected in different ways and to a different extent. Taking all of this together, neither strictly subject-based nor more integrated approaches can be regarded as superior for students’ learning. In practice, a well-implemented approach drawing on the best of both worlds is likely needed, but without further research that uses strong causal designs, no firm conclusions can be drawn.

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